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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,493	12/31/2003	Pak-Lung Seto	42P17717	1215
8791	7590	08/10/2007	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040			LEE, CHUN KUAN	
		ART UNIT	PAPER NUMBER	
		2181		
		MAIL DATE	DELIVERY MODE	
		08/10/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/749,493	SETO, PAK-LUNG
	Examiner	Art Unit
	Chun-Kuan (Mike) Lee	2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 May 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-10,12-16,18-21 and 23-28 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,3-10,12-16,18-21 and 23-28 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 December 2003 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

RESPONSE TO ARGUMENTS

1. Applicant's arguments with respect to claims 1, 3-10, 12-16, 18-21 and 23-28 have been considered but are moot in view of the new ground(s) of rejection. Currently, claims 2, 11, 17 and 22 are canceled and claims 1, 3-10, 12-16, 18-21 and 23-29 are pending for examination.

I. INFORMATION CONCERNING OATH/DECLARATION

Oath/Declaration

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

II. INFORMATION CONCERNING DRAWINGS

Drawings

3. The applicant's drawings submitted are acceptable for examination purposes.

III. REJECTIONS BASED ON 35 U.S.C. 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 24, it appears unclear to the examiner as to how the storage protocol can be predetermined, if there were a determination among a plurality of storage protocols that is needed in order to discover which of the one of the plurality of storage protocols would be utilized for communication. The examiner will assume the following claimed limitation of "a selected storage protocol" for the current examination.

IV. REJECTIONS BASED ON DOUBLE PATENTING

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 3, 5-7, 9-10, 14-15, 19-20 and 24 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 7-10, 14-16, 21-22, 24-25 and 28-29 of U.S. Patent No. 7,093,033 in view of Kahn et al. (US Patent 6,636,909).

6. As per claim 1, the US Patent (7,093,033) teaches an apparatus comprising:
an intermediate device to be coupled between a storage protocol controller (i.e. single integrated circuit chip including processor circuitry) and at least one storage device, and capable of communicating in accordance with a plurality of storage protocols (e.g. Serial Attached Small Computer System Interface protocol and a Serial Advanced Technology Attachment protocol) (claims 8 and 14), and including,
protocol sensing circuitry (i.e. processor circuitry) to determine (i.e. discovering) based on an initialization signal sequence (i.e. predetermined signal sequence) indicative of a storage protocol received from the at least one storage device which one of the plurality of storage protocols via which the at least one storage device to be coupled to the intermediate device is capable of communicating (claims 8-9 and 14);
and
the data stream (e.g. data stream during communication) includes the storage protocol determined by the protocol sensing circuitry (Claim 8).

The US Patent (7,093,033) does not teach the apparatus comprising:
flow control circuitry to control a data stream between the at least one storage device and the storage protocol controller.

Kahn teaches a flow control system and method comprising:
flow control circuitry to control a data stream between the at least one storage device (Fig. 1, ref. 110) and the storage protocol controller (Fig. 1, ref. 100) (col. 2, ll. 29-51).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Kahn's flow control into US Patent (7,093,033)'s interface device for the benefit of improving transferring of commands by preventing the dropping of commands by the storage device, as the storage device's internal queue is almost full (Kahn, col. 2, l. 67 to col. 3, l. 3).

7. As per claim 3, the US Patent (7,093,033) and Kahn teach all the limitations of claim 1 as discussed above, where US Patent (7,093,033) further teaches the apparatus comprising where the initialization signal sequence comprises an out-of-band signal sequence (US Patent (7,093,033), claim 10).

8. As per claim 5, the US Patent (7,093,033) and Kahn teach all the limitations of claim 1 as discussed above, where Kahn further teaches the apparatus comprising wherein the intermediate device is capable of being coupled, via at least one cable, to said at least one storage device (Kahn, col. 1, ll. 32-35).

9. As per claim 6, the US Patent (7,093,033) and Kahn teach all the limitations of claim 1 as discussed above, where both further teach the apparatus comprising the

plurality of different storage protocols comprise a Fiber Channel protocol (Kahn, col. 1, II. 14-29), a Serial Attached Small Computer System Interface protocol (US Patent (7,093,033), claim 14), and a Serial Advanced Technology Attachment protocol (US Patent (7,093,033), claim 14).

10. As per claim 7, the US Patent (7,093,033) and Kahn teach all the limitations of claim 1 as discussed above, where Kahn further teaches the apparatus comprising wherein the intermediate device is capable of being coupled to a cable compatible with at least one of said storage protocols (Kahn, col. 1, II. 32-35).

11. As per claim 9, the US Patent (7,093,033) teaches a system, comprising:
at least one storage protocol controller (i.e. processor circuit) capable of communicating in accordance with a plurality of storage protocols (e.g. Serial Attached Small Computer System Interface protocol and a Serial Advanced Technology Attachment protocol), the a at least one storage protocol controller being capable of being coupled with a bus (claims 22 and 28-29);
a storage enclosure including a plurality of storage devices, wherein two or more of the storage devices are combined in a Redundant Array of Inexpensive Disk (RAID) configuration, and each storage device is capable of communicating in accordance with one of Serial Attached SCSI (SAS) and Serial Advanced Technology Attachment (SATA) (claims 22, 24-25 and 28-29);

an intermediate device (e.g. a single integrated circuit chip) coupled between the storage protocol controller and the storage enclosure, and capable of communicating in accordance with a plurality of storage protocols (claim 22 and 28-29), and including, protocol sensing circuitry (i.e. processor circuit) to determine (i.e. discovering) based on an initialization signal sequence (i.e. predetermined signal sequence) indicative of a storage protocol received from the at least one of the storage devices in the storage enclosure which one of the plurality of storage protocols via which the at least one storage device to be coupled to the intermediate device is capable of communicating (claim 22 and 28-29), and

the data stream (e.g. data stream during communication) includes the storage protocol determined by the protocol sensing circuitry (Claim 22).

US Patent (7,093,033) does not teach the system, comprising communicating in Fiber Channel (FC) storage protocol; and flow control circuitry to control a data stream between the at least one storage device and the storage protocol controller.

Kahn teaches a flow control system and method comprising: communicating in Fiber Channel (FC) storage protocol (Kahn, col. 1, ll. 14-29); and flow control circuitry to control a data stream between the at least one storage device (Fig. 1, ref. 110) and the storage protocol controller (Fig. 1, ref. 100) (col. 2, ll. 29-51).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Kahn's FC storage protocol and flow control into US Patent (7,093,033) s interface device for the benefit of improving transferring of commands by preventing the dropping of commands by the storage device, as the storage device's internal queue is almost full (Kahn, col. 2, l. 67 to col. 3, l. 3).

12. As per claim 10, the US Patent (7,093,033) and Kahn teach all the limitations of claim 9 as discussed above, where Kahn further teaches the system comprising wherein the intermediate device is coupled to said storage protocol controller and said at least one of the plurality of storage devices via one or more cables (Kahn, col. 1, II. 32-35).

13. As per claim 14, the US Patent (7,093,033) and Kahn teach all the limitations of claim 9 as discussed above, where both further teach the system comprising wherein the plurality of different storage protocols comprise a Fiber Channel protocol (Kahn, col. 1, II. 14-29), a Serial Attached Small Computer System Interface protocol (US Patent (7,093,033), claim 29); and a Serial Advanced Technology Attachment protocol (US Patent (7,093,033), claim 29).

14. As per claim 15, the US Patent (7,093,033) teaches a method comprising: determining (i.e. discovering), at least in part, by an intermediate device (i.e. processor circuitry of a single integrated circuit chip) supporting a plurality of storage

protocols (e.g. Serial Attached Small Computer System Interface protocol and a Serial Advanced Technology Attachment protocol), based on an initialization signal sequence (i.e. predetermined signal sequence) indicative of a storage protocol received from at least one storage device which one of the plurality of storage protocols via which said at least one storage device coupled with the intermediate device is capable of communicating (claims 1-2 and 7); and

at least one data stream (e.g. data stream during communication) being communicated in accordance with the one storage protocol from said at least one storage device to a storage protocol controller (claim 1).

US Patent (7,093,033) does not teach the method comprising controlling, at least in part by the intermediate device, the data stream.

Kahn teaches a flow control system and method comprising controlling, obviously at least in part by an intermediate device, a data stream (col. 2, ll. 29-51).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Kahn's FC storage protocol and flow control into US Patent (7,093,033)'s interface device for the benefit of improving transferring of commands by preventing the dropping of commands by the storage device, as the storage device's internal queue is almost full (Kahn, col. 2, l. 67 to col. 3, l. 3).

15. As per claim 19, the US Patent (7,093,033) and Kahn teach all the limitations of claim 15 as discussed above, where the US Patent (7,093,033) further teaches the system comprising wherein communicating, by the intermediate device with said at least

one storage device with a selected storage protocol among the plurality of storage protocols (US Patent (7,093,033), claim 1).

16. As per claim 20, the US Patent (7,093,033) teaches an article comprising:
 - a storage medium having stored thereon instructions that when executed by a machine result in the following operations (claim 15):
 - determining (i.e. discovering), at least in part, by an intermediate device (e.g. processor circuitry of a single integrated circuit chip) supporting a plurality of storage protocols (e.g. Serial Attached Small Computer System Interface protocol and a Serial Advanced Technology Attachment protocol) based on an initialization signal sequence (i.e. predetermined signal sequence) indicative of a storage protocol received from a storage device, which one of the plurality of storage protocols via which the at least one storage device coupled with the intermediate device is capable of communicating (claim 15-16 and 21); and
 - at least one data stream (e.g. data stream during communication) being communicated in accordance with the one storage protocol from said at least one storage device to a storage protocol controller (claim 15).

The US Patent (7,093,033) does not teach the article comprising controlling, at least in part by the intermediate device, the data stream.

Kahn teaches a flow control system and method comprising controlling, obviously at least in part by an intermediate device, a data stream (col. 2, ll. 29-51).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Kahn's FC storage protocol and flow control into US Patent (7,093,033)'s interface device for the benefit of improving transferring of commands by preventing the dropping of commands by the storage device, as the storage device's internal queue is almost full (Kahn, col. 2, l. 67 to col. 3, l. 3).

17. As per claim 24, the US Patent (7,093,033) and Kahn teach all the limitations of claim 20 as discussed above, where the US Patent (7,093,033) further teaches the article comprising the following operations: communicating, by the intermediate device with said at least one storage device with a selected storage protocol among the plurality of storage protocols (claim 15).

18. As per claims 4, 8, 12-13, 16, 18, 21, 23 and 25-29, dependent claims 4, 8, 12-13, 16, 18, 21, 23 and 25-29 are unpatentable at least due to direct dependent on rejected independent claims 1, 9, 15 and 20.

V. CLOSING COMMENTS

Conclusion

a. STATUS OF CLAIMS IN THE APPLICATION

The following is a summary of the treatment and status of all claims in the application as recommended by M.P.E.P. 707.07(i):

a(1) CLAIMS REJECTED IN THE APPLICATION

Per the instant office action, claims 1, 3-10, 12-16, 18-21 and 23-29 have received a final action on the merits. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

b. DIRECTION OF FUTURE CORRESPONDENCES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

IMPORTANT NOTE

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 27, 2007

Chun-Kuan (Mike) Lee
Examiner
Art Unit 2181

Alford Kindred
**ALFORD KINDRED
PRIMARY EXAMINER**

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